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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,343	10/28/2003	Mitsuaki Oshima	2003_1571	2565

513 7590 02/08/2007
WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

ETTEHADIEH, ASLAN

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/694,343

Applicant(s)

OSHIMA, MITSUAKI

Examiner

Aslan Ettehadieh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-86 is/are pending in the application.
- 4a) Of the above claim(s) 1-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-86 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's cancellation of claims 1 – 38 and addition of claims 39 – 86 in the reply filed on 10/28/2003 is acknowledged. Claims 1 – 38 are now cancelled and claims 39 – 86 are added. Office action address claims 39 – 86.

Information Disclosure Statement

2. The information disclosure statement filed 12/21/2005 fails to comply with MPEP § 2218 because the submission of (AN) 2627574 CN and (AT) 1569334 CN does not at the least include an English translation of the abstract/summary. The information disclosure statement filed 12/21/2005 will be considered with the exclusion of (AN) 2627574 CN and (AT) 1569334 CN.

A copy of each cited patent or printed publication, as well as a translation of each non-English document (or a translation of at least the portion(s) relied upon) is required so that all materials will be available to the examiner for full consideration. See MPEP § 2218.

3. The information disclosure statement filed 10/28/2003 fails to comply with MPEP § 2218 because the submission of ALL documents cited under "Foreign Patent Documents" and ALL documents cited under "Other Documents" does not at the least include an English translation of the abstract/summary. The information disclosure statement filed 10/28/2003 will be considered with the exclusion of ALL documents cited under "Foreign Patent Documents" and ALL documents cited under "Other Documents".

A copy of each cited patent or printed publication, as well as a translation of each non-English document (or a translation of at least the portion(s) relied upon) is required so that all materials will be available to the examiner for full consideration. See MPEP § 2218.

4. The information disclosure statement filed 10/28/2003 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because ALL documents cited under "Foreign Patent Documents" and ALL documents cited under "Other Documents have not been submitted. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Priority

5. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 03/26/1992 and 09/25/1992. It is noted, however, that applicant has not filed a certified copy of the 4-67934 and 4-256070 application as required by 35 U.S.C. 119(b).

Specification

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

requested in correcting any errors of which applicant may become aware in the specification.

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

8. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the multiplexer operates to convert the first modulated signal to a converted signal (i.e. claim 45), figures 29 and 37 show a multiplexed signal modulated (reverse order of operation) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

10. Claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80 are rejected on the ground of nonstatutory double patenting over (individually) claims 31 and 32 of U. S. Patent No. 5555275 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

11. Regarding claims 43 – 44, 55 – 56, 67 – 68, and 79 – 80, U. S. Patent No. 5555275 discloses an apparatus and method comprising: a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (claim 31, col. 53 lines 44 – 64, claim 32); a transmitter operable to transmit the modulated signal (claim 31, col. 53 lines 44 – 64, claim 32); a receiver operable to receive the second transmission signal (claim 31, col. 53 line 65 – col. 54 line 14, claim 32), wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (claim 31, col. 53 line 44 – col. 54 line 14, claim 32); and a

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demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 31, col. 53 line 65 – col. 54 line 14, claim 32).

12. Regarding claims 41– 42, 53 – 54, 65 – 66, and 77 – 78, U. S. Patent No. 5555275 discloses an apparatus and method comprising: a modulator operable to modulate a first data stream according to a 4-level PSK to produce a modulated signal (claim 31, col. 53 lines 44 – 64, claim 32; where m signal points in a signal space can include 4-level PSK, i.e. 4PSK); a transmitter operable to transmit the modulated signal as the first transmission signal (claim 31, col. 53 lines 44 – 64, claim 32); a receiver operable to receive the second transmission signal (claim 31, col. 53 line 65 – col. 54 line 14, claim 32), wherein the second transmission signal has information of a second data stream and a third data stream, the second data stream is modulated according to a 4-level PSK and the third data stream is modulated according to an n -level PSK (claim 31, col. 53 line 44 – col. 54 line 14, claim 32); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 31, col. 53 line 65 – col. 54 line 14, claim 32).

13. Regarding claims 39 – 40, 51 – 52, 63 – 64, and 75 – 76, U. S. Patent No. 5555275 discloses an apparatus and method comprising: a modulator operable to modulate a first data stream according to a QPSK to produce a modulated signal (claim 31, col. 53 lines 44 – 64, claim 32; where m signal points in a signal space can include QPSK); a transmitter operable to transmit the modulated signal as the first transmission signal (claim 31, col. 53 lines 44 – 64, claim 32); a receiver operable to receive the

second transmission signal (claim 31, col. 53 line 65 – col. 54 line 14, claim 32), wherein the second transmission signal has information of a second data stream and a third data stream, the second data stream is modulated according to a QPSK and the third data stream is modulated according to an n-level QAM (claim 31, col. 53 line 44 – col. 54 line 14, claim 32; where m signal points in a signal space can include QAM, i.e. 4QAM); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 31, col. 53 line 65 – col. 54 line 14, claim 32).

14. Claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80 are rejected on the ground of nonstatutory double patenting over claim 2 of U. S. Patent No. 6256357 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

15. Regarding claims 43 – 44, 55 – 56, 67 – 68, and 79 – 80, U. S. Patent No. 6256357 discloses an apparatus and method comprising: a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (claim 2); a transmitter operable to transmit the modulated signal (claim 2); a receiver operable to receive the second transmission signal (claim 2), wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream

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is n (claim 2); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 2).

16. Regarding claims 41– 42, 53 – 54, 65 – 66, and 77 – 78, U. S. Patent No. 6256357 discloses an apparatus and method comprising: a modulator operable to modulate a first data stream according to a 4-level PSK to produce a modulated signal (claim 2; where assigning each data stream to a respective constellation in a signal space can include 4-level PSK); a transmitter operable to transmit the modulated signal as the first transmission signal (claim 2); a receiver operable to receive the second transmission signal (claim 2), wherein the second transmission signal has information of a second data stream and a third data stream, the second data stream is modulated according to a 4-level PSK and the third data stream is modulated according to an n -level PSK (claim 2); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 2).

17. Regarding claims 39 – 40, 51 – 52, 63 – 64, and 75 – 76, U. S. Patent No. 6256357 discloses an apparatus and method comprising: a modulator operable to modulate a first data stream according to a QPSK to produce a modulated signal (claim 2; where assigning each data stream to a respective constellation in a signal space can include QPSK); a transmitter operable to transmit the modulated signal as the first transmission signal (claim 2); a receiver operable to receive the second transmission signal (claim 2), wherein the second transmission signal has information of a second data stream and a third data stream, the second data stream is modulated

according to a QPSK and the third data stream is modulated according to an n-level QAM (claim 2; where assigning each data stream to a respective constellation in a signal space can include QAM); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 2).

18. Claims 39 – 86 are rejected on the ground of nonstatutory double patenting over (individually) claims 1 and 4 of U. S. Patent No. 5892879 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

19. Regarding claims 43 – 44, 49 – 50, 55 – 56, 61 – 62, 67 – 68, 73 – 74, 79 – 80, and 85 – 86, U. S. Patent No. 5892879 discloses an apparatus and method comprising: a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a first modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (claims 1, 4); a multiplexer operable to convert the first modulated signal to a CDMA converted signal according to CDMA (claims 1, 4; where dividing and separating is being interpreted as multiplexing and including CDMA); a transmitter operable to transmit the CDMA converted signal as the first transmission signal (claims 1, 4); a receiver operable to receive the second transmission signal, wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (claims 1, 4); a demultiplexer operable to convert the second transmission signal to

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a second modulated signal according to CDMA (claims 1, 4; where reproducing and signal point groups are being interpreted as demultiplexing); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claims 1, 4).

20. Regarding claims 41 – 42, 47 – 48, 53 – 54, 59 – 60, 65 – 66, 71 – 72, 77 – 78, and 83 – 84, U. S. Patent No. 5892879 discloses an apparatus and method comprising: a modulator operable to modulate a first data stream according to a 4-level PSK to produce a first modulated signal (claims 1, 4; where m signal points in a signal space can include 4-level PSK, i.e. 4PSK); a multiplexer operable to convert the first modulated signal to a CDMA converted signal according to CDMA (claims 1, 4; where dividing and separating is being interpreted as multiplexing and including CDMA); a transmitter operable to transmit the CDMA converted signal as the first transmission signal (claims 1, 4); a receiver operable to receive the second transmission signal, wherein the second transmission signal has information of a second data stream and a third data stream, the second data stream is modulated according to a 4-level PSK, and the third data stream is modulated according to an n-level PSK (claims 1, 4); a de-multiplexer operable to convert the second transmission signal to a second modulated signal according to CDMA (claims 1, 4; where reproducing and signal point groups are being interpreted as demultiplexing); and a demodulator operable to demodulate the second modulated signal to produce the second data stream and the third data stream (claims 1, 4).

21. Regarding claims 39 – 40, 45 – 46, 51 – 52, 57 – 58, 63 – 64, 69 – 70, 75 – 76, and 81 – 82, U. S. Patent No. 5892879 discloses an apparatus and method comprising: a modulator operable to modulate a first data stream according to a QPSK to produce a first modulated signal (claim 1, 4; where m signal points in a signal space can include QPSK); a multiplexer operable to convert the first modulated signal to a CDMA converted signal according to CDMA (claims 1, 4; where dividing and separating is being interpreted as multiplexing and including CDMA); a transmitter operable to transmit the CDMA converted signal as the first transmission signal (claims 1, 4); a receiver operable to receive the second transmission signal, wherein the second transmission signal has information of a second data stream and a third data stream, the second data stream is modulated according to a QPSK, and the third data stream is modulated according to an n-level QAM (claims 1, 4; where m signal points in a signal space can include QAM, i.e. 4QAM); a de-multiplexer operable to convert the second transmission signal to a second modulated signal according to CDMA (claims 1, 4; where reproducing and signal point groups are being interpreted as demultiplexing); and a demodulator operable to demodulate the second modulated signal to produce the second data stream and the third data stream (claims 1, 4).

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

22. Claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over (individually) claims 1, 5 of U.S. Patent No. 5802241. Although the conflicting claims are not identical, they are not patentably distinct from each other because it would have been obvious at the time the invention was made to have the receiver receive the two signals for demodulation as to have had the two demodulated signals modulated by the transmitter.

23. Regarding claims 43 – 44, 55 – 56, 67 – 68, and 79 – 80, U. S. Patent No. 5802241 discloses an apparatus and method comprising: a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (claim 1, 5); a transmitter operable to transmit the modulated signal (claim 1, 5); a receiver operable to receive the second transmission signal (claim 1, 5), wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (claim 1, 5); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 1, 5).

24. Regarding claims 41– 42, 53 – 54, 65 – 66, and 77 – 78, U. S. Patent No. 5802241 discloses an apparatus and method comprising: a modulator operable to modulate a first data stream according to a 4-level PSK to produce a modulated signal (claim 1, 5; where m signal points in a signal space can include 4-level PSK, i.e. 4PSK);

a transmitter operable to transmit the modulated signal as the first transmission signal (claim 1, 5); a receiver operable to receive the second transmission signal (claim 1, 5), wherein the second transmission signal has information of a second data stream and a third data stream, the second data stream is modulated according to a 4-level PSK and the third data stream is modulated according to an n-level PSK (claim 1, 5); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 1, 5).

25. Regarding claims 39 – 40, 51 – 52, 63 – 64, and 75 – 76, U. S. Patent No. 5802241 discloses an apparatus and method comprising: a modulator operable to modulate a first data stream according to a QPSK to produce a modulated signal (claim 1, 5; where m signal points in a signal space can include QPSK); a transmitter operable to transmit the modulated signal as the first transmission signal (claim 1, 5); a receiver operable to receive the second transmission signal (claim 1, 5), wherein the second transmission signal has information of a second data stream and a third data stream, the second data stream is modulated according to a QPSK and the third data stream is modulated according to an n-level QAM (claim 1, 5; where m signal points in a signal space can include QAM, i.e. 4QAM); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 1, 5).

26. Claims 39 – 86 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 5819000.

Although the conflicting claims are not identical, they are not patentably distinct from each other because it would have been obvious at the time the invention was made to have a transmitter transmit the modulated signal and a receiver received the modulated signal for demodulation.

27. Regarding claims 43 – 44, 55 – 56, 67 – 68, and 79 – 80, U. S. Patent No. 5819000 discloses an apparatus and method comprising: a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (claim 3); a transmitter operable to transmit the modulated signal (claim 3); a receiver operable to receive the second transmission signal (claim 3), wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (claim 3); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 3).

28. Regarding claims 49 – 50, 61 – 62, 73 – 74, and 85 – 86, U. S. Patent No. 5819000 discloses an apparatus and method comprising: a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a first modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (claim 3); a multiplexer operable to convert the first modulated signal to a CDMA converted signal according to CDMA (claim 3; where dividing and multiplexing is being interpreted as multiplexing and including CDMA); a transmitter

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operable to transmit the CDMA converted signal as the first transmission signal (claim 3); a receiver operable to receive the second transmission signal, wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (claim 3); a demultiplexer operable to convert the second transmission signal to a second modulated signal according to CDMA (claim 3; where reproducing the multiplexed signal is being interpreted as demultiplexing); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 3).

29. Regarding claims 41–42, 53 – 54, 65 – 66, and 77 – 78, U. S. Patent No.

5819000 discloses an apparatus and method comprising: a modulator operable to modulate a first data stream according to a 4-level PSK to produce a modulated signal (claim 3; where m signal points in a signal space can include 4-level PSK, i.e. 4PSK); a transmitter operable to transmit the modulated signal as the first transmission signal (claim 3); a receiver operable to receive the second transmission signal (claim 3), wherein the second transmission signal has information of a second data stream and a third data stream, the second data stream is modulated according to a 4-level PSK and the third data stream is modulated according to an n -level PSK (claim 3); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 3).

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30. Regarding claims 47 – 48, 59 – 60, 71 – 72, and 83 – 84, U. S. Patent No. 5819000 discloses an apparatus and method comprising: a modulator operable to modulate a first data stream according to a 4-level PSK to produce a first modulated signal (claim 3; where m signal points in a signal space can include 4-level PSK, i.e. 4PSK); a multiplexer operable to convert the first modulated signal to a CDMA converted signal according to CDMA (claim 3; where dividing and multiplexing is being interpreted as multiplexing and including CDMA); a transmitter operable to transmit the CDMA converted signal as the first transmission signal (claim 3); a receiver operable to receive the second transmission signal, wherein the second transmission signal has information of a second data stream and a third data stream, the second data stream is modulated according to a 4-level PSK, and the third data stream is modulated according to an n-level PSK (claim 3); a de-multiplexer operable to convert the second transmission signal to a second modulated signal according to CDMA (claim 3; where reproducing the multiplexed signal is being interpreted as demultiplexing); and a demodulator operable to demodulate the second modulated signal to produce the second data stream and the third data stream (claim 3).

31. Regarding claims 39 – 40, 51 – 52, 63 – 64, and 75 – 76, U. S. Patent No. 5819000 discloses an apparatus and method comprising: a modulator operable to modulate a first data stream according to a QPSK to produce a modulated signal (claim 3; where m signal points in a signal space can include QPSK); a transmitter operable to transmit the modulated signal as the first transmission signal (claim 3); a receiver operable to receive the second transmission signal (claim 3), wherein the second

transmission signal has information of a second data stream and a third data stream, the second data stream is modulated according to a QPSK and the third data stream is modulated according to an n-level QAM (claim 3; where m signal points in a signal space can include QAM, i.e. 4QAM); and a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (claim 3).

32. Regarding claims 45 – 46, 57 – 58, 69 – 70, and 81 – 82, U. S. Patent No. 5819000 discloses an apparatus and method comprising: a modulator operable to modulate a first data stream according to a QPSK to produce a first modulated signal (claim 3; where m signal points in a signal space can include QPSK); a multiplexer operable to convert the first modulated signal to a CDMA converted signal according to CDMA (claim 3; where dividing and multiplexing is being interpreted as multiplexing and including CDMA); a transmitter operable to transmit the CDMA converted signal as the first transmission signal (claim 3); a receiver operable to receive the second transmission signal, wherein the second transmission signal has information of a second data stream and a third data stream, the second data stream is modulated according to a QPSK, and the third data stream is modulated according to an n-level QAM (claim 3; where m signal points in a signal space can include QAM, i.e. 4QAM); a de-multiplexer operable to convert the second transmission signal to a second modulated signal according to CDMA (claim 3; where reproducing the multiplexed signal is being interpreted as demultiplexing); and a demodulator operable

to demodulate the second modulated signal to produce the second data stream and the third data stream (claim 3).

33. Claims 39 – 86 are provisionally rejected on the ground of nonstatutory double patenting over claims 39 – 110 of copending Application No. 10/695780 (2005/0018785). This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

34. Regarding claim 39, 2005/0018785 discloses all limitations of claim 39 (see 2005/0018785 claim 39; where 4QAM is being interpreted as including QPSK).

35. Regarding claim 40, 2005/0018785 discloses all limitations of claim 40 (see 2005/0018785 claim 40, 41).

36. Regarding claim 41, 2005/0018785 discloses all limitations of claim 41 (see 2005/0018785 claim 42).

37. Regarding claim 42, 2005/0018785 discloses all limitations of claim 42 (see 2005/0018785 claim 43, 44).

38. Regarding claim 43, 2005/0018785 discloses all limitations of claim 43 (see 2005/0018785 claim 45).

39. Regarding claim 44, 2005/0018785 discloses all limitations of claim 44 (see 2005/0018785 claim 46, 47).
40. Regarding claim 45, 2005/0018785 discloses all limitations of claim 45 (see 2005/0018785 claim 48; where 4QAM is being interpreted as including QPSK).
41. Regarding claim 46, 2005/0018785 discloses all limitations of claim 46 (see 2005/0018785 claim 49, 50).
42. Regarding claim 47, 2005/0018785 discloses all limitations of claim 47 (see 2005/0018785 claim 51).
43. Regarding claim 48, 2005/0018785 discloses all limitations of claim 48 (see 2005/0018785 claim 52, 53).
44. Regarding claim 49, 2005/0018785 discloses all limitations of claim 49 (see 2005/0018785 claim 54).
45. Regarding claim 50, 2005/0018785 discloses all limitations of claim 50 (see 2005/0018785 claim 55, 56).
46. Regarding claim 51, 2005/0018785 discloses all limitations of claim 51 (see 2005/0018785 claim 57; where 4QAM is being interpreted as including QPSK).
47. Regarding claim 52, 2005/0018785 discloses all limitations of claim 52 (see 2005/0018785 claim 58, 59).
48. Regarding claim 53, 2005/0018785 discloses all limitations of claim 53 (see 2005/0018785 claim 60).
49. Regarding claim 54, 2005/0018785 discloses all limitations of claim 54 (see 2005/0018785 claim 61, 62).

50. Regarding claim 55, 2005/0018785 discloses all limitations of claim 55 (see 2005/0018785 claim 63).
51. Regarding claim 56, 2005/0018785 discloses all limitations of claim 56 (see 2005/0018785 claim 64, 65).
52. Regarding claim 57, 2005/0018785 discloses all limitations of claim 57 (see 2005/0018785 claim 66; where 4QAM is being interpreted as including QPSK).
53. Regarding claim 58, 2005/0018785 discloses all limitations of claim 58 (see 2005/0018785 claim 67, 68).
54. Regarding claim 59, 2005/0018785 discloses all limitations of claim 59 (see 2005/0018785 claim 69).
55. Regarding claim 60, 2005/0018785 discloses all limitations of claim 60 (see 2005/0018785 claim 70, 71).
56. Regarding claim 61, 2005/0018785 discloses all limitations of claim 61 (see 2005/0018785 claim 72).
57. Regarding claim 62, 2005/0018785 discloses all limitations of claim 62 (see 2005/0018785 claim 73, 74).
58. Regarding claim 63, 2005/0018785 discloses all limitations of claim 63 (see 2005/0018785 claim 75; where 4QAM is being interpreted as including QPSK).
59. Regarding claim 64, 2005/0018785 discloses all limitations of claim 64 (see 2005/0018785 claim 76, 77).
60. Regarding claim 65, 2005/0018785 discloses all limitations of claim 65 (see 2005/0018785 claim 78).

61. Regarding claim 66, 2005/0018785 discloses all limitations of claim 66 (see 2005/0018785 claim 79, 80).
62. Regarding claim 67, 2005/0018785 discloses all limitations of claim 67 (see 2005/0018785 claim 81).
63. Regarding claim 68, 2005/0018785 discloses all limitations of claim 68 (see 2005/0018785 claim 82, 83).
64. Regarding claim 69, 2005/0018785 discloses all limitations of claim 69 (see 2005/0018785 claim 84; where 4QAM is being interpreted as including QPSK).
65. Regarding claim 70, 2005/0018785 discloses all limitations of claim 70 (see 2005/0018785 claim 85, 86).
66. Regarding claim 71, 2005/0018785 discloses all limitations of claim 71 (see 2005/0018785 claim 87).
67. Regarding claim 72, 2005/0018785 discloses all limitations of claim 72 (see 2005/0018785 claim 88, 89).
68. Regarding claim 73, 2005/0018785 discloses all limitations of claim 73 (see 2005/0018785 claim 90).
69. Regarding claim 74, 2005/0018785 discloses all limitations of claim 74 (see 2005/0018785 claim 91, 92).
70. Regarding claim 75, 2005/0018785 discloses all limitations of claim 75 (see 2005/0018785 claim 93; where 4QAM is being interpreted as including QPSK).
71. Regarding claim 76, 2005/0018785 discloses all limitations of claim 76 (see 2005/0018785 claim 94, 95).

72. Regarding claim 77, 2005/0018785 discloses all limitations of claim 77 (see 2005/0018785 claim 96).
73. Regarding claim 78, 2005/0018785 discloses all limitations of claim 78 (see 2005/0018785 claim 97, 98).
74. Regarding claim 79, 2005/0018785 discloses all limitations of claim 79 (see 2005/0018785 claim 99).
75. Regarding claim 80, 2005/0018785 discloses all limitations of claim 80 (see 2005/0018785 claim 100, 101).
76. Regarding claim 81, 2005/0018785 discloses all limitations of claim 81 (see 2005/0018785 claim 102; where 4QAM is being interpreted as including QPSK).
77. Regarding claim 82, 2005/0018785 discloses all limitations of claim 82 (see 2005/0018785 claim 103, 104).
78. Regarding claim 83, 2005/0018785 discloses all limitations of claim 83 (see 2005/0018785 claim 105).
79. Regarding claim 84, 2005/0018785 discloses all limitations of claim 84 (see 2005/0018785 claim 106, 107).
80. Regarding claim 85, 2005/0018785 discloses all limitations of claim 85 (see 2005/0018785 claim 108).
81. Regarding claim 86, 2005/0018785 discloses all limitations of claim 86 (see 2005/0018785 claim 109, 110).

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other

copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

82. Claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80 are provisionally rejected on the ground of nonstatutory double patenting over (individually) claims 3, 27 of copending Application No. 10/778171 (2004/0161049). This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

83. Regarding claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80, 2004/0161049 discloses all limitations of claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80 (see 2004/0161049 claim 3, 27; where m signal points is being interpreted as 4 constellation points, QPSK, QAM, and 4PSK, and vice versa).

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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84. Claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80 are rejected under 35

U.S.C. 102(e) as being anticipated by Halbert-Lassalle et al. (US 5197061).

85. Regarding claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80, Halbert-Lassalle discloses a method and an apparatus comprising:

a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (col. 4 lines 37 – 48, 67, col. 6 lines 41 – 67, figures 3, 5, 6 ;where the modulation as discloses by Halbert-Lassalle can be PSK, PSK, QAM; wherein QAM, 4PSK are being interpreted as including 4 point constellation, QPSK, 4PSK, nPSK, and nQAM);

a transmitter operable to transmit the modulated signal (col. 4 lines 37 – 48, 67, col. 6 lines 41 – 67, figures 3, 5, 6);

a receiver operable to receive the second transmission signal,

wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (col. 4 lines 37 – 48, 67, col. 6 lines 41 – 67, figures 3, 5, 6); and

a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (col. 4 lines 37 – 48, 67, col. 6 lines 41 – 67, figures 3, 5, 6).

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86. Claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80 are rejected under 35

U.S.C. 102(e) as being anticipated by Wei (US 5243629).

87. Regarding claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80, Wei discloses a method and an apparatus comprising:

a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (col. 3 line 43 – col. 4 line 29, figures 1, 2, 5; wherein QAM is being interpreted as including 4 point constellation, QPSK, 4PSK, nPSK, and nQAM);

a transmitter operable to transmit the modulated signal (col. 3 line 43 – col. 4 line 29, figures 1, 2, 5);

a receiver operable to receive the second transmission signal, wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (col. 3 line 43 – col. 4 line 29, figures 1, 2, 5); and

a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (col. 3 line 43 – col. 4 line 29, figures 1, 2, 5).

88. Claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80 are rejected under 35

U.S.C. 102(e) as being anticipated by Hess et al. (US 5170413).

89. Regarding claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80, Hess discloses a method and an apparatus comprising:

a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (col. 5 line 12 – col. 6 line 63, figures 1, 2, 4, 7; wherein QAM is being interpreted as including 4 point constellation, QPSK, 4PSK, nPSK, and nQAM);

a transmitter operable to transmit the modulated signal (col. 5 line 12 – col. 6 line 63, figures 1, 2, 4, 7);

a receiver operable to receive the second transmission signal, wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (col. 5 line 12 – col. 6 line 63, figures 1, 2, 4, 7); and

a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (col. 5 line 12 – col. 6 line 63, figures 1, 2, 4, 7).

90. Claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80 are rejected under 35 U.S.C. 102(e) as being anticipated by Jasper et al. (US 5519730).

91. Regarding claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80, Jasper discloses a method and an apparatus comprising:

a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (col. 3 line 47 – col. 5 line 47, col. 6 line 63 – col. 7 line 4, figures 1, 2, 4, 6);

a transmitter operable to transmit the modulated signal (col. 3 line 47 – col. 5 line 47, col. 6 line 63 – col. 7 line 4, figures 1, 2, 4, 6);

a receiver operable to receive the second transmission signal,
wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (col. 3 line 47 – col. 5 line 47, col. 6 line 63 – col. 7 line 4, figures 1, 2, 4, 6); and

a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (col. 3 line 47 – col. 5 line 47, col. 6 line 63 – col. 7 line 4, figures 1, 2, 4, 6).

92. Claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80 are rejected under 35

U.S.C. 102(b) as being anticipated by Yoshida et al. (US 4751478).

93. Regarding claims 39 – 44, 51 – 56, 63 – 68, and 75 – 80, Yoshida discloses a method and an apparatus comprising:

a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a modulated signal, wherein the number of signal

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points of the constellation for the first data stream is 4 (col. 1 line 55 – col. 2 line 15, col. 3 lines 21 – 32, col. 4 lines 6 – 49, figures 1, 2, 3, 4, 6; wherein QAM is being interpreted as including 4 point constellation, QPSK, 4PSK, nPSK, and nQAM);

a transmitter operable to transmit the modulated signal (col. 1 line 55 – col. 2 line 15, col. 3 lines 21 – 32, col. 4 lines 6 – 49, figures 1, 2, 3, 4, 6);

a receiver operable to receive the second transmission signal,
wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (col. 1 line 55 – col. 2 line 15, col. 3 lines 21 – 32, col. 4 lines 6 – 49, figures 1, 2, 3, 4, 6); and

a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (col. 1 line 55 – col. 2 line 15, col. 3 lines 21 – 32, col. 4 lines 6 – 49, figures 1, 2, 3, 4, 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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94. Claims 45 – 50, 57 – 62, 69 – 74, and 81 – 86 rejected under 35 U.S.C. 103(a) as being unpatentable over Halbert-Lassalle et al. (US 5197061) in view of Hulyalkar et al. (US 5291289).

95. Regarding claims 45 – 50, 57 – 62, 69 – 74, and 81 – 86, Halbert-Lassalle discloses a method and an apparatus comprising:

a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (col. 4 lines 37 – 48, 67, col. 6 lines 41 – 67, figures 3, 5, 6 ;where the modulation as discloses by Halbert-Lassalle can be PSK, PSK, QAM; wherein QAM, 4PSK are being interpreted as including 4 point constellation, QPSK, 4PSK, nPSK, and nQAM);

a multiplexer operable to convert the first modulated signal to converted signal (col. 4 lines 37 – 48, 67, col. 6 lines 41 – 67, figures 3, 5, 6; where the inverse FFT, element 32, is being interpreted as a multiplexer);

a transmitter operable to transmit the converted signal as the first transmission signal (col. 4 lines 37 – 48, 67, col. 6 lines 41 – 67, figures 3, 5, 6);

a receiver operable to receive the second transmission signal,

wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (col. 4 lines 37 – 48, 67, col. 6 lines 41 – 67, figures 3, 5, 6);

a demultiplexer operable to convert the second transmission signal to a second modulated signal (col. 4 lines 37 – 48, 67, col. 6 lines 41 – 67, figures 3, 5, 6; where the FFT, element 35, is being interpreted as a demultiplexer); and

a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (col. 4 lines 37 – 48, 67, col. 6 lines 41 – 67, figures 3, 5, 6).

Halbert-Lassalle does not explicitly state a multiplexer operable according to CDMA and a demultiplexer according to CDMA.

In the same field of endeavor, however, Hulyalkar discloses a multiplexer operable according to CDMA and a demultiplexer according to CDMA (figure 4, col. 5 lines 59 – 64; where multiplexing/demultiplexing is being interpreted as including CDMA and further CDMA provides a technique in which signals can be generated by different spreading codes and thus at the receiver the despreading will be accurate in order to reject signals that have been spread by any other spreading codes).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use a multiplexer operable according to CDMA and a demultiplexer according to CDMA as taught by Hulyalkar in the system of Halbert-Lassalle to provide a technique in which signals can be generated by different spreading codes and thus at the receiver the despreading will be accurate in order to reject signals that have been spread by any other spreading codes.

96. Claims 45 – 50, 57 – 62, 69 – 74, and 81 – 86 rejected under 35 U.S.C. 103(a) as being unpatentable over Wei (US 5243629) in view of Rice (US 5210770).

97. Regarding claims 45 – 50, 57 – 62, 69 – 74, and 81 – 86, Wei discloses a method and an apparatus comprising:

a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (col. 3 line 43 – col. 4 line 29, figures 1, 2, 5; wherein QAM is being interpreted as including 4 point constellation, QPSK, 4PSK, nPSK, and nQAM);

a multiplexer operable to convert the first modulated signal to converted signal (col. 3 line 43 – col. 4 line 29, figures 1, 2, 5; where element 175 is being interpreted as a multiplexer);

a transmitter operable to transmit the converted signal as the first transmission signal (col. 3 line 43 – col. 4 line 29, figures 1, 2, 5);

a receiver operable to receive the second transmission signal, wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (col. 3 line 43 – col. 4 line 29, figures 1, 2, 5);

a demultiplexer operable to convert the second transmission signal to a second modulated signal (col. 3 line 43 – col. 4 line 29, figures 1, 2, 5; where element 50 is being interpreted as a demultiplexer); and

a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (col. 3 line 43 – col. 4 line 29, figures 1, 2, 5).

Wei does not explicitly state a multiplexer operable according to CDMA and a demultiplexer according to CDMA.

In the same field of endeavor, however, Rice discloses a multiplexer operable according to CDMA and a demultiplexer according to CDMA (col. 1 lines 25 – 36; where multiplexing/demultiplexing is being interpreted as including CDMA).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use a multiplexer operable according to CDMA and a demultiplexer according to CDMA as taught by Rice in the system of Wei to provide a technique in which signals can be generated by different spreading codes and thus at the receiver the despreading will be accurate in order to reject signals that have been spread by any other spreading codes.

98. Claims 45 – 50, 57 – 62, 69 – 74, and 81 – 86 rejected under 35 U.S.C. 103(a) as being unpatentable over Hess et al. (US 5170413) in view of Rice (US 5210770).

99. Regarding claims 45 – 50, 57 – 62, 69 – 74, and 81 – 86, Hess discloses a method and an apparatus comprising:

a modulator operable to assign a first data stream to a constellation in a vector space diagram to produce a modulated signal, wherein the number of signal points of the constellation for the first data stream is 4 (col. 5 line 12 – col. 6 line 63,

figures 1, 2, 4, 7; wherein QAM is being interpreted as including 4 point constellation, QPSK, 4PSK, nPSK, and nQAM);

a multiplexer operable to convert the first modulated signal to converted signal (col. 5 line 12 – col. 6 line 63, figures 1, 2, 4, 7; where element 22 is being interpreted as a multiplexer);

a transmitter operable to transmit the converted signal as the first transmission signal (col. 5 line 12 – col. 6 line 63, figures 1, 2, 4, 7);

a receiver operable to receive the second transmission signal, wherein the second transmission signal has information of a second data stream and a third data stream, the number of signal points of the constellation for the second data stream is 4, and the number of signal points of the constellation for the third data stream is n (col. 5 line 12 – col. 6 line 63, figures 1, 2, 4, 7);

a demultiplexer operable to convert the second transmission signal to a second modulated signal (col. 5 line 12 – col. 6 line 63, figures 1, 2, 4, 7; where proceeding element 64 is being interpreted as a demultiplexer); and

a demodulator operable to demodulate the second transmission signal to produce the second data stream and the third data stream (col. 5 line 12 – col. 6 line 63, figures 1, 2, 4, 7).

Hess does not explicitly state a multiplexer operable according to CDMA and a demultiplexer according to CDMA, however, figure 1 and 4 discloses spreading and dispreading.

In the same field of endeavor, however, Rice discloses a multiplexer operable according to CDMA and a demultiplexer according to CDMA (col. 1 lines 25 – 36; where multiplexing/demultiplexing is being interpreted as including CDMA).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use a multiplexer operable according to CDMA and a demultiplexer according to CDMA as taught by Rice in the system of Hess to provide a technique in which signals can be generated by different spreading codes and thus at the receiver the despreading will be accurate in order to reject signals that have been spread by any other spreading codes.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aslan Ettehadieh whose telephone number is (571) 272-8729. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Aslan Ettehadieh
Examiner
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AE


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